

Work Order ID 66405

Monday, February 14, 2011 2:21:39 PM

Page 1

Item ID: D206-667-203BL

Accept

Setup Start

Revision ID:

Item Name: Crosstube Aft, Blue

Blue

Stop

Start Date: 2/15/2011 Start Qty: 1.00

Required Date: 3/1/2011 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

MF

Date: 11-02-14

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-247

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

+ D8F9346

Sulorics

BG 11-3-18

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-243 using CNC bender program D206-667-203

SAD

11-03-07

①

120

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

8/103/07

11-3-7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Required Date: 3/1/2011 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 and drill table DT8577 and tower holes #6 as per QSI0010 and as per Dwg D206-667-243. Drill all (3) top holes.

2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all four sides.

3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.

4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill only the top (2) holes.

5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243

6-Drill Fwd rivet holes using drill Jig DT8789FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.

7-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D206-667-243.

8-C'sink holes as per Dwg D206-667-243.

9-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-243 Inside of Cuff(Donot engrave on outside of tube)

10-Deburr & Inspect for surface damage. Repair damage within limits as per

DP/SAP
11-3-7

PHO →

SAP 11-03-07

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D206-667-203BL PAR #: _____ Fault Category: x-tubes NCR: Yes No DQA: _____ Date: 11/03/28
 Resolution: rework Disposition: rework QA: N/C Closed: CP Date: 11/03/28

NCR: <u>66405</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>11/03/17</u>	<u>4</u> <u>ISO</u>	<u>employee drilled a extra</u> <u>hole in cold for D2073-05</u> <u>nut plate</u> <u>R.I. employee mixes up</u>	<u>CP</u> <u>11.03.17</u> <u>PS1012</u>	<u>- Create DS2 to Account</u> <u>tube</u> <u>DS7 to 9346 Rev 16</u>	<u>CP</u> <u>11.03.17</u>	<u>S</u> <u>11/03/16</u>	<u>CP</u> <u>11.03.17</u> <u>PS1012</u>	<u>S</u> <u>11/03/17</u>
		<u>add + bottom of tube</u> <u>lock w/attention</u>	<u>CP</u> <u>11.03.17</u> <u>PS1012</u>		<u>CP</u> <u>11.03.17</u>		<u>CP</u> <u>11.03.17</u> <u>PS1012</u>	<u>S</u> <u>11/03/17</u>

NOTE: Date & initial all entries

Work Order ID 66405

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Monday, February 14, 2011 2:21:39 PM

Item ID: D206-667-203BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 3/1/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
StampDwg
D206-667-243

140



HandFXtube

Hand Finishing Crosstubes

Crosstubes Chemical Conversion

0.00

SAD

11-03-08

(1)

Memo

0.00

150



QC

Quality Control

QC3- Inspect Part Finish

0.00

Smolozlog

Memo

0.00

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Smolozlog



Memo

0.00

(10)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

1. The first group of respondents was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The second group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The third group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The fourth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The fifth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The sixth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The seventh group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The eighth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The ninth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago. The tenth group was composed of 100 individuals who were randomly selected from the telephone book of the city of Chicago.

Monday, February 14, 2011 2:21:39 PM

Accept

[illegible]**Setup Start**

Stop



Customer:

[illegible]

Required Date: 3/1/2011 **Req'd Qty:** 1.00

Reference:

Run Start

1

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00

Table 1. Demographic characteristics of study population

0.00

Liquid Penetrant Inspection as per QSI 038Or
Issue P/O: 13641
LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

0.00

[illegible]

Memo

Ensure copy of NDT results attached to work order.

0.00

Memo

Ensure results are as per Dwg D206-667-243

CL 11/03/10 (1)

PC4/3/19 C

m 11 03 11 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Start Date: 2/15/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 3/1/2011 Req'd Qty: 1.00



Customer:

Reference:

Run Start

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Start Date: 2/15/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 3/1/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

220

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Install nut plates as per Dwg D206-667-243.

RT 11-03-16

230

0.00



Skidtubes

Crosstubes

Memo

0.00

Crosstubes

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (3) top holes should be facing up.

A/R Magnobond 6398 : 116227

RT 11-03-15

2-Install supports and clamps as per Dwg D206-667-243. Torque clamps to 80-100 in lb

RT 11-03-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66405

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Item ID: D206-667-203BL

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Setup Start



Revision ID:

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Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 3/1/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/103/17



250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

11/3/12

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo


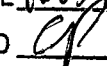
0.00

Quality Control

8/103/16



POSITIVE RECALL

→ EFFECTIVE 11/03/17 AUTH 
RELEASED  DATE 11.03.17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 66405

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Monday, February 14, 2011 2:21:39 PM

Item ID: D206-667-203BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 3/1/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

270

0.00



Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-203

Location: 14PPP Rev: 0

280

0.00



QC

QC21- Final Inspection - Work Order Release

Memo

0.00

Quality Control

11/3/12

11/3/21

CL11/03/21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Monday, February 14, 2011 2:21:35 PM

Page 1

Work Order ID: 66405

Parent Item: D206-667-203BL

Parent Item Name: Crosstube Aft, Blue



Start Date: 2/15/2011

Required Date: 3/1/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 10.10.29 now at chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

AN5-10A 		Purchased	No			250	Each	168.0000	10	10		11/3/12	
Bolt													

Location	Loc Qty	Loc Code
ST337	168	
115589	50	
115700	68	
116704	50	

AN5-32A 		Purchased	No			250	Each	149.0000	4	4		11/3/12	
Bolt													

Location	Loc Qty	Loc Code
ST340	149	
115016	38	
115108	50	
115589	60	
115698	1	

AN5-34A 		Purchased	No			250	Each	68.0000	4	4		11/3/12	
Bolt													

Location	Loc Qty	Loc Code
ST340	68	
113149	2	
115835	20	
116003	20	
116191	6	
116704	20	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Picklist Print

Monday, February 14, 2011 2:21:35 PM

Page 2

Work Order ID: 66405

Parent Item: D206-667-203BL

Parent Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011

Required Date: 3/1/2011

Start Qty: 1.00

Required Qty: 1.00

AN960JD516 NAS1149D0563J Purchased No

250

Each

34.0000

18

18



Washer

Location

Loc Qty

Loc Code

ST

34

103694

18

107534

12

109287

4

D206-667-203TRN Manufactured No

220

Each

2.0000

1

1



Crosstube Turning Detail

Location

Loc Qty

Loc Code

LG

2

65133

1

65134

1

D2873-043 Manufactured No

220

Each

24.0000

2

2



Nut Plate Assembly

Location

Loc Qty

Loc Code

LG

22

63497

2

65375

20

ST

2

60981

2

M116540 11/3/11

SAD 11-03-03

ST 11-03-16

x2

Monday, February 14, 2011 2:21:35 PM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID: 66405

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Parent Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011

Required Date: 3/1/2011

Start Qty: 1.00

Required Qty: 1.00

D2873-045

Manufactured No

220

Each

24.0000

2

2



Nut Plate Assembly



PT 11-03-16

Location

Loc Qty

Loc Code

LG

24

60982

4

63498

1

65132

19

x2

D2892-1

Blue

Manufactured No

230

Each

30.0000

2

2



Support



PT 11-03-15

Location

Loc Qty

Loc Code

LG

30

41986

2

42785

18

62592

10

x2

D3595-063-450

Manufactured No

230

Each

68.3390

4

4



RUBBER CUSHION



67067 x4

PT 11-03-15

Location

Loc Qty

Loc Code

LG

51.33897368

53775

5.97897368

58161

3.56

59580

0.12

61465

4.68

63960

10

65656

27

ST415

17

64171

16

64300

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item Name: Crosstube Aft, Blue

Start Date: 2/15/2011

Required Date: 3/1/2011

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W10

Purchased

No

230

Each

150.0000

14

14



RIVET



25 11-03-16

Location

Loc Qty

Loc Code

LG051

150

114245

2

115405

2

115881

16

116186

30

116767

100

x 14

MS21042L5

Purchased

No

250

Each

1,108.000

4

4



Nut



11/3/18

11/3/18

Location

Loc Qty

Loc Code

ST139

26

114813

26

ST300

1082

115594

386

116105

496

116548

200

4

MS21920-22

Purchased

No

230

Each

56.0000

4

4



Clamp(per MIL-DTL-8783C)



25 11-03-15

Location

Loc Qty

Loc Code

LG

56

114077

6

116207

50

x4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

Item	Qty -243	Part Number	Description
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

66405

RELEASED
8/11/17

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-243	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DE APPR.	RF	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

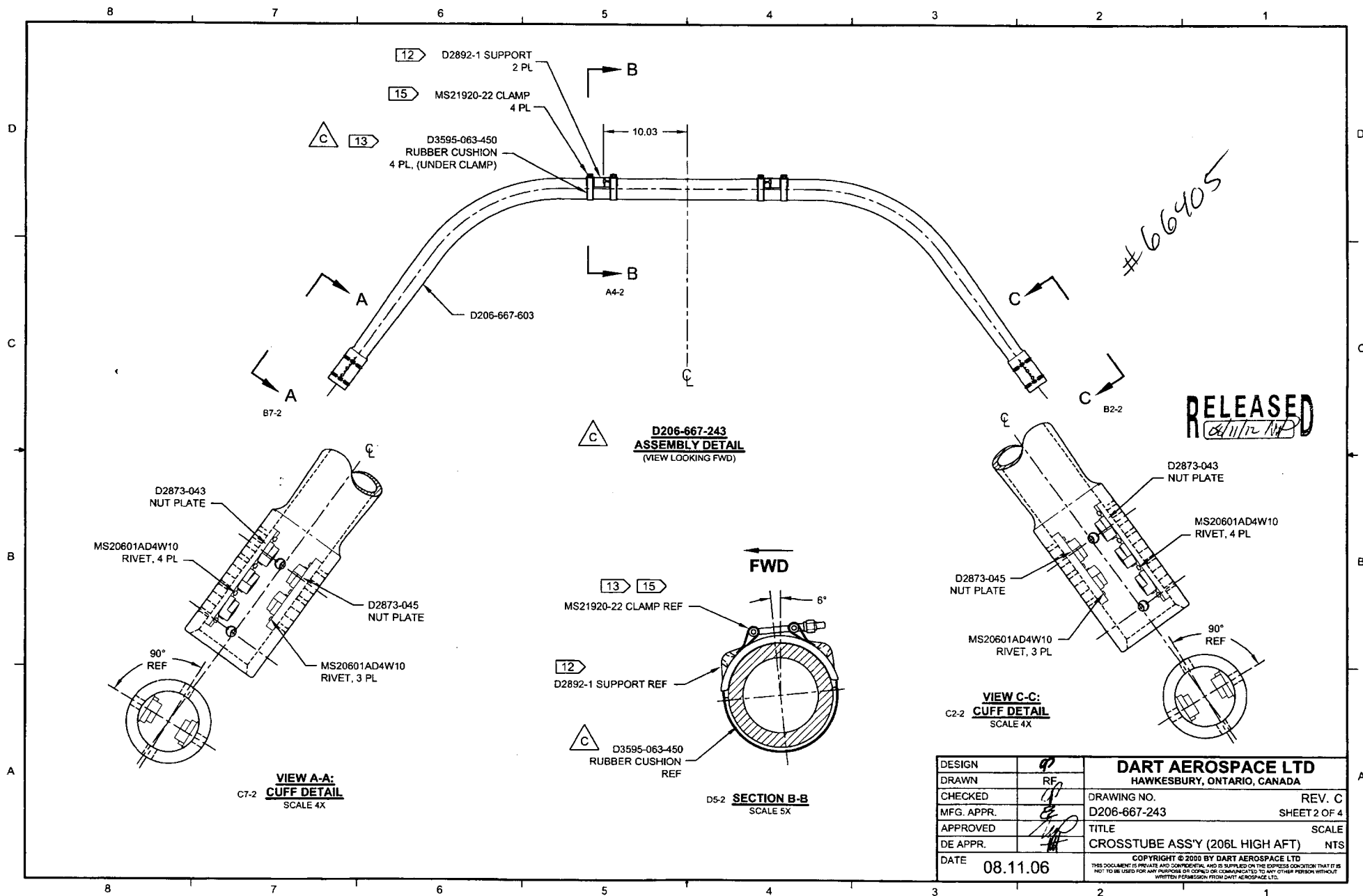
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

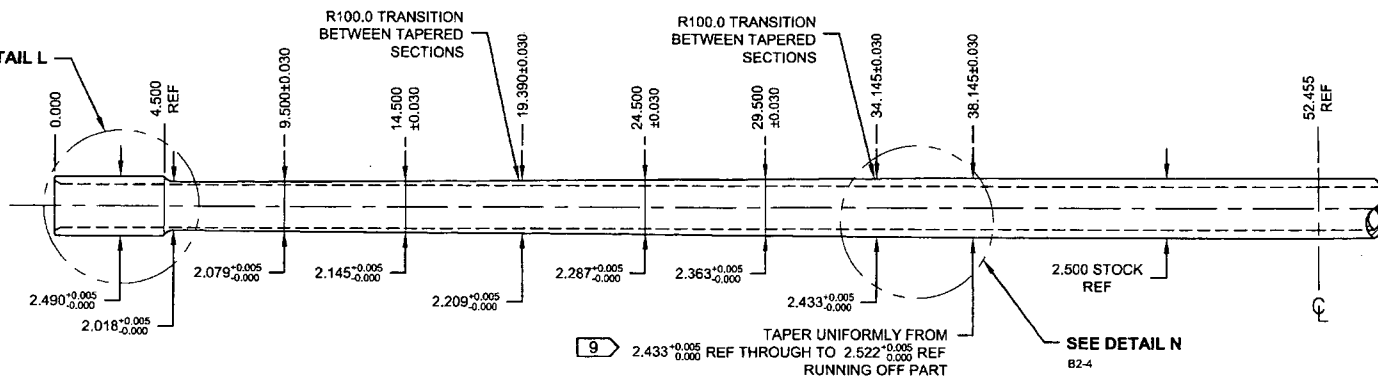
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

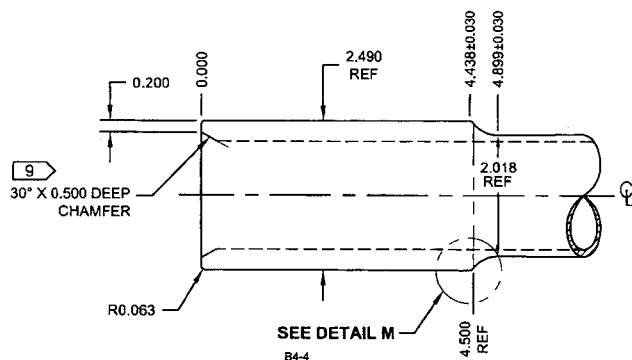
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

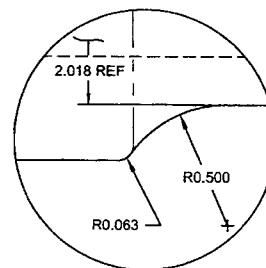
SEE DETAIL L
B7-4



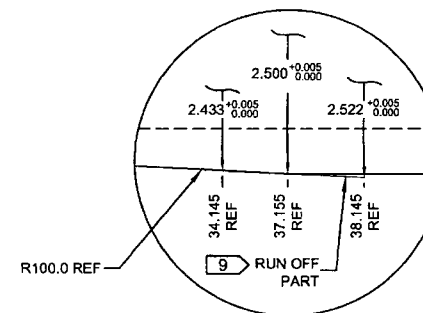
TURNING DETAIL



DETAIL L: CROSSTUBE CUFF
NOT TO SCALE



DETAIL M: CUFF TRANSITION
NOT TO SCALE



DETAIL N: TAPER RUN-OFF
NOT TO SCALE

RELEASED
08/11/12

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-243	SHEET 4 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

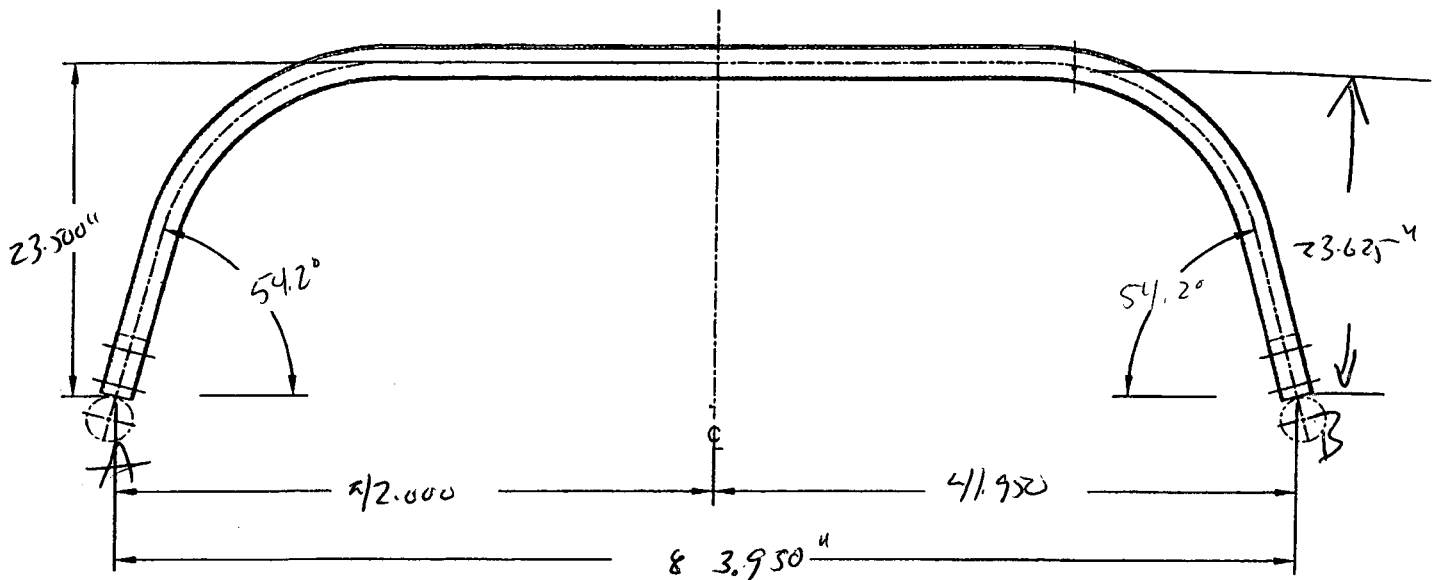
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	66405
Description: Crosstube High Aft (206L)		Part Number:	D206-667-203
Inspection Dwg: D206-667-243 Rev: C		Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.1



Comments

QC15 Inspection	8
Date	11/03/07

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.11.17	Dwg Rev updated	KJ	
C	09.12.14	Dimensions update per Dwg Rev C	KJ	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

ENGINEERING CHANGE NOTICE **DART AEROSPACE LTD**

Date: 11.03.09	Job No.: ENG1114MAR	ADR Yes/No: N	ADR Date:	ECN #: 11- 535
Product No.: D206-667		Created By: CP	Approved By:	
Product Name: Crosstubes		Checked By: <i>[Signature]</i>	General Manager Approval:	

Distribution	Reqd	Resp	Initial / Date
Production Manager / Coord.	Y	LL	
Purchasing Coord.	N	-	
Production Engineering Coord.	N		

Distribution	Reqd	Resp	Initial / Date
DQA / QA Coord.	N		
QC Coordinator	Y	JM	
Customer Technical Support	N		
Marketing	N		
Customer Order Processing	N		

Reason for Change:
Mis-drilled crosstubes

Documents Affected:
Release DSI 9346 Rev. K

PARTS MUST COMPLY ☐ PREVIOUS PARTS SATISFACTORY ☒

#	Quality Assurance Actions	Reqd	Resp	Notes	Complete
1	Notify Previous Customers	N			
2	Notify Eurocopter France	N			
3					

#	Engineering Actions	Reqd	Resp	Notes	Complete
4	Required Documents/Drawings Under Review	N			
5	Update Master Document List (MDL)	N			
6	Update Product Compatability Matrix	N			
7	Create Eurocopter Form (FEE)	N			
8	Notify TC / FAA of Change	N			
9					

#	Document Control Actions	Reqd	Resp	Notes	Complete
10	Move Electronic Files/Design Journal	Y	KJ		11.03.09 <i>[Signature]</i>
11	Update Blue/Pink/DSI Folder and Electronic Files	Y	KJ		11.03.09 <i>[Signature]</i>
12	Update Approved/Preliminary Dwg PDF Files	Y	KJ		11.03.09 <i>[Signature]</i>
13	Update Document Record (DR)	Y	KJ	in progress Rev. N	11.03.09 <i>[Signature]</i>
14	Update Product Development Summary	N			
15	Update QSI 021 and/or STC Approval List	N			
16	Update Parts / STC Database	N			
17	Update / Verify ARC Database	N			
18	Create / Update Change Record Form / Item Card Database	N			
19	Create / Update PPP's	N			
20	Red Decals required?	N			
21	Update Document Control Database / Laminated Dwgs	N			
22	Update Grey Project / Electronic Binder PDF Files	N			
23	Update D-Part/M-Drawing/DSI/DEO Master Binders	Y	KJ		11.03.09 <i>[Signature]</i>
24					

Description / Action:
 - add DSI 9346 Rev. K to D206-667-203 B/N 66405
 - add to blue files as "on request only"

ECN Verified & Complete: _____ Date: _____

Chris Provencal

From: dshepherd@dartaero.com
Sent: March 9, 2011 9:31 AM
To: Chris Provencal
Cc: Mike Petsche; Bill Beckett; ssheldon@dartaero.com; Jason Murdoch
Subject: Re: DSI 9346

So ... What you're saying is that we've made the same mistake 33 times without being able to put in a fullproof method for being able to prevent this from happening?

You can add my signature and release this DSI.

David

Sent from my BlackBerry device on the Rogers Wireless Network

From: "Chris Provencal" <cprovencal@dartaero.com>
Date: Tue, 8 Mar 2011 12:46:48 -0500
To: David Shepherd<dshepherd@dartaero.com>
Cc: Mike Petsche<mpetsche@dartaero.com>
Subject: FW: DSI 9346

David,

They made another 206 xtube with an extra hole. It needs to ship this week. I've updated the DSI to add the b/n. If you're unable to sign it, I could have Kim put your signature on the pdf...

-Chris

From: Dart Aerospace [mailto:hby.engineering@dartaero.com]
Sent: March 8, 2011 12:31 PM
To: CProvencal
Subject: Attached Image



LIQUID PENETRANT TEST REPORT

P- 05499

CLIENT

ATTENTION

ADDRESS

PROJECT

ITEM(S) EXAMINED

DATE

ACUREN JOB No.

PO/WO No.

WORK LOCATION

ACCEPTANCE STD.

PAGE

OF

TIME

AM

PM

JOB DESCRIPTION

PROCEDURE No. LT-003 REV./DATE 2008

TECHNIQUE No. LT-003 REV./DATE 2008

PART No.

MATERIAL

Aluminum

THICKNESS

N/A

SCOPE

TEST DETAILS

METHOD

☒ FLUORESCENT

☐ VISIBLE

☒ WATER WASH

☐ SOLVENT REMOVABLE

☐ POST EMULSIFIED

FAMILY BRAND

MAGNA FLUX

BLACK LIGHT S/N 13798

☒ OUTPUT > 1000 μ W/cm²

☒ AMBIENT < 2 fc

PENETRANT

EL-67

MINIMUM DWELL TIME

10

MIN.

LIGHTING EQUIP.

☐ FLASHLIGHT

☐ TROUBLELIGHT

☐ OUTPUT > 100 fc @ SURFACE

PENETRANT REMOVER

H₂O

MINIMUM DRY TIME

>10

MIN.

OTHER

DEVELOPER

SKD-52

MINIMUM DWELL TIME

10

MIN.

LIGHT METER S/N

CAL DUE DATE

10/10/11

DEVELOPER TYPE

☒ NON AQUEOUS

☐ AQUEOUS

☐ DRY

TEST SURFACE

SURFACE CONDITION

☐ AS GROUND

☐ AS WELDED

☐ MACHINED

☐ SHOT BLASTED

☒ CLEAN BARE METAL

SURFACE TEMPERATURE

☐ < -4°C / 20°F

☐ -4°C / 20°F TO 10°C / 50°F

☒ 10°C / 50°F TO 52°C / 125°F

☐ > 52°C / 125°F

RESULTS-

(☐ METRIC ☐ IMPERIAL)

- 1 CROSS TUBE W.O. ID 66402 ✓
- 2 CROSS TUBE W.O. ID 66403 ✓
- 3 CROSS TUBE W.O. ID 66405 ✓
- 4 CROSS TUBE W.O. ID 67043 ✓

ITEM ID: D206-667-103BL FWD
ITEM ID: D206-667-103BL FWD
ITEM ID: D206-667-203BL AFT
ITEM ID: D206-667-203BL AFT

NO RELEVANT INDICATION WAS DETECTED
AS PER APPLICABLE STANDARD.

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE

TECHNICIAN (SIGNATURE):

NAME (PRINT):

Jan Haley

PRINT

Jan Haley

SIGNATURE

Vivian Desrosiers

1ST TECHNICIAN

CGSB LEVEL

2 SNT LEVEL

CGSB REG. No

3049

2ND TECHNICIAN

CGSB LEVEL

SNT LEVEL

CGSB REG. No

DTR # E44638

REPORT

REVIEWED BY:

NAME

INITIALS

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY

PT Sept 2005